

# The new ecological paradigm revisited: anchoring the NEP scale in environmental ethics

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The New Environmental or Ecological Paradigm (NEP) is widely acknowledged as a reliable multiple-item scale to capture environmental attitudes or beliefs. It has been used in statistical analyses for almost 30 years, primarily by psychologists, but also by political scientists, sociologists and geographers. The scale's theoretical foundation is, however, seldom discussed and not comprehensively specified. This article explores the environmental ethics that underlies the scale, analysing which ethical positions on human–nature relations the scale seem to match. The study shows that pronounced forms of anthropocentrism are well captured by the scale, while the environmental position is 'shallow' rather than 'deep green' and misses crucial elements of the contemporary environmental ethics debate.

## Introduction

When addressing the environmental situation, values or beliefs are highly important. Understood as '... guiding principles in life' (Stern *et al.*, 1995, p. 1615), they are thought to influence how we judge the severity of environmental problems and how we choose between strategies to overcome them, or choose not to act at all (e.g. Douglas & Wildavsky, 1982; Thompson *et al.*, 1990). A similar kind of reasoning both applies at the individual level where personal norms influence how we approach the natural environment, and when values or beliefs are addressed at an overarching level, as more or less coherent systems (cultures, social norms or even paradigms) are thought to influence political strategies, for instance to reach sustainability (e.g. Catton & Dunlap, 1980).

The NEP scale (New Ecological Paradigm or, originally, New Environmental Paradigm) is widely acknowledged as one of the most reliable multiple-item scales to

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measure people's beliefs towards the natural environment within quantitative research (e.g. Stern *et al.*, 1995; Schultz & Oskamp, 1996). The scale was introduced by Dunlap and Van Liere (1978) to capture comprehensive systems of ecological beliefs, as most prior attempts to tap public environmental concern focused on single issues, such as pollution, land use and energy conservation (e.g. Weigel & Weigel, 1978). Basically, the NEP scale captures '... beliefs about humanity's ability to upset the balance of nature, the existence of limits to growth for human societies, and humanity's right to rule over the rest of nature' (Dunlap *et al.*, 2000, p. 427). The scale has primarily been used by psychologists (e.g. Stern, 2000), but also by political scientists (e.g. Dalton *et al.*, 1999), sociologists (e.g. Albrecht *et al.*, 1982) and geographers (e.g. Lalonde & Jackson, 2002), generally indicating widespread acceptance of ecological beliefs, both in the USA and in Europe (Noe & Snow, 1990; Gooch, 1995; Widegren, 1998; Dunlap *et al.*, 2000).

The scale has been revised several times, most recently by Dunlap *et al.* (2000), primarily to address environmental problems in an updated sense, using modern terminology in the items constituting the scale. It has, however, been argued that these efforts have not been comprehensive enough. For instance, Lalonde and Jackson (2002) stress that the NEP scale is in acute need of revision if the intention is to measure *contemporary* attitudes towards the natural environment. One of their main objections concerns the need to consider the impact that the deep ecology movement has had on people's environmental beliefs. A slightly different, but related, position is taken in this article, focusing on the theoretical shortcomings of the scale. When Dunlap and Van Liere designed the NEP scale, they did so based on vast experience with mass surveys on environmental public opinion, particularly in the USA (e.g. Dunlap, 1975). The construction of the NEP was further backed up by reviews of the environmental literature of that time, that is the late 1960s and 1970s, which reflected increased awareness of human impact on the natural environment, for instance the Club of Rome report, *The Limits to Growth* (Meadows 1972), and the claimed need to discard the anthropocentric view that nature exists exclusively for human use (Barbour, 1973). As such, Stern (2000: 413) notes that '... the NEP is a sort of "folk" ecological theory from which beliefs about the adverse consequences of environmental change can be deduced ...'. This suggests that the scale is not only dated, but also poorly specified from a theoretical point of view.

This study uses environmental ethics, understood as the moral relationships between human beings and nature, to explore the theoretical foundation of the NEP scale. Which ethical positions does the scale seem to capture and are these positions accurately reflected by the scale's components? In other words, are the central aspects of the scale and the statements used to measure them necessary and sufficient from the viewpoint of environmental ethics? In seeking answers to these questions, this investigation both aspires to 'anchor' the NEP scale more firmly in theoretical discussions on environmental ethics and to enrich the interpretations of NEP survey data by offering a more comprehensive framework for analysis.

Two approaches are available for this study: (a) to regard environmental ethics as underlying values (comparable to liberalism) that might foster people's likelihood to

accept an ecological worldview (cf. Dunlap & Van Liere, 1978) or (b) to understand environmental ethics as an important and inseparable feature of the scale. Both interpretations seem fully plausible when examining how the scale has been used. However, when Dunlap *et al.* (2000, p. 427) looked at the scale and its use during the past two decades, they found that ‘... in retrospect it nonetheless seems reasonable to argue that the NEP items primarily tap “primitive beliefs” about the nature of the earth and humanity’s relationship with it’. As the fundamentals in human–nature relationships are exactly what environmental ethics are all about, this is the position taken in this article, relating the scale’s positions (the ecological worldview and its opposite) and the items used, to the contemporary environmental ethics debate.

### Environmental ethics

Two systems of beliefs—anthropocentrism and ecocentrism—capture much of the contemporary ethical discourse on the relationships between human beings and nature, and will consequently be used to structure this analysis. Starting with anthropocentrism, human beings are seen as separated from nature and more worthy than other organisms. The uniqueness of human beings is, for instance, manifested in our developed capacity to use language, to reason logically and to use advanced tools when building our societies. Anthropocentrism not only entails human moral superiority vis-à-vis non-humans, according to this outlook moral consideration is exclusively confined to human beings and our acts towards nature are judged on the basis of how they affect us, not on how they affect other beings (Eckersley, 1992; Vincent, 1992). The values associated with nature are instrumental in character, in the sense that the natural environment is seen as providing resources that can be used for human purposes. Thus, nature is expected to promote the satisfaction of human wants, both in material and aesthetic terms (Mathews, 1994; Fox, 1995). Furthermore, anthropocentrism ‘breathes’ optimism, in the sense that humans are largely in control of the surrounding world and that problems arising from modern living can be taken care of, primarily through technological development. Human problem-solving capacity clearly applies to all kinds of difficulties, yet the focus within environmental ethics obviously is on those problems that might occur as a consequence of human intervention with nature (Stenmark, 2000). This faith in progress and prosperity has a long tradition in Western thought with roots in the Judeo-Christian tradition and the Enlightenment Period with its pronounced human-centred worldview (e.g. Meyer, 2001). ‘Human beings would by means of knowledge and perspicacity make themselves masters over nature and thereby achieve better and better conditions for a prosperous life on earth ...’ (Tingsten, 1969, p. 11, my translation).

In contrast, according to an ecocentric worldview, the natural environment consists of complex webs of ecological interdependence. Nature’s interconnectedness not only means that pollution and other forms of human intervention can have multiple and highly elusive ecological effects, it also casts serious doubt on the anthropocentric idea of an absolute dividing line between human beings and nature (Taylor, 1992). ‘Humans and the rest of Nature are *truly and deeply* interconnected and interrelated

in terms of their mutual long-term interests and welfare' (Sessions, 1992, p. 104).<sup>1</sup> Ecological interconnectedness

... is seen as providing the basis for a new sense of both *empathy* and *caution* [i.e.] ... a greater sense of compassion for the fate of other life-forms (both human and nonhuman) and a keener appreciation of the fact that many of our activities are likely to have a range of unforeseen consequences for ourselves and other life-forms (Eckersley, 1992, p. 28, italics in original).

This perception of wholeness within ecocentrism is founded on an entirely different conception of who/what has intrinsic value than is the case with anthropocentrism.<sup>2</sup> Anthropocentrism only grants intrinsic value and, in prolongation, rights and interests to human beings (to dominate other forms of life as ecocentrism's advocates would claim). While ecocentrism's proponents, such as Naess (1989), assert the intrinsic value of each individual living organism, humans of course included, *and* of collectives such as species and ecosystems (e.g. forests, rivers, mountains and wetlands). This extended view on who/what is the holder of intrinsic value is used to justify respect across species boundaries, geographical boundaries and time boundaries, in the sense that consideration for humans and non-humans encompass both present and future generations (Eckersley, 1992).

Ideas on intrinsic value are often used within environmental ethics to distinguish between human-centred and more eco-centred views (e.g. Vincent, 1992). A hypothetical hierarchy ranging from the recognition of the intrinsic value of mammals to assigning value to parts of nature that show little similarity with human beings is illustrated by the works of Regan, Singer, Leopold and Naess. Starting with the animal rights approach, Regan (1983) advocates the intrinsic value of mammals due to their supposed mental capacities that include the ability to have beliefs, memory and some kind of sense of the future. In Regan's opinion, the intrinsic value of mammals ought to entitle them to respect and moral rights to life. Singer's (1977) approach is less restrictive than Regan's and focuses on animals that are able to experience pain. This implies a shift in concern from mammals to sentient beings and from rights-theory to utilitarianism. An implication of Singer's arguments is that human beings must justify their interference with nature, avoiding needless suffering of sentient beings. The borderline between sentient and non-sentient beings lies, according to Singer's classification, between arthropods and molluscs. Ecosystems can also need protection; however, this is not owing to their intrinsic worth, but because of their instrumental value as habitats for sentient beings (Eckersley, 1992).

Leopold (1949) gives intrinsic value and moral rights to *species* of animals and plants and to their habitats. According to this perspective, actions should be judged on the basis of their contribution to the stability of the ecological community. Leopold's ideas have been criticized for leaving room for authoritarian or even fascist implications, by implying that single individuals can be sacrificed for the benefit of the whole (cf. Stenmark, 2000). The same argument can be applied to Singer's utilitarian position (Hay, 2002). This is not the case as we turn to *ecocentrism*, according to which intrinsic worth applies to individual living organisms as well as to species and

entire biotic communities (Naess, 1989; Eckersley, 1995; Fox, 1995). Thus, the ecocentric stance on intrinsic worth is the most comprehensive ethical position represented here.

This sketch of ideas regarding who or what is assigned intrinsic value well illustrates that from a theoretical point of view ecocentrism and anthropocentrism constitute a dimension with the two ethical positions at opposite ends, regarding the status given to the non-human world. In the words of Eckersley (1992, p. 33), ecocentrism and anthropocentrism are '... the opposing poles of a wide spectrum of differing orientations toward nature'. Consequently, there are a number of mixed value systems in between.<sup>3</sup> *Shallow ecology* is one such example, to use the terminology of Naess (1973). Proponents of shallow ecology focus on the importance of the environment for the health and well-being of people. They worry about the environmental situation, object to over-exploitation of natural resources and suggest political measures to deal with the environmental problems they perceive. However, according to their critics, they do not ask 'deep' questions about ecological relationships and the origins of environmental problems. Therefore, the recommendations that they make leave the basic structures of advanced industrial societies intact. Following more ecocentric, or 'deep green' perspectives, the environmental crisis calls for reconsideration of major political, economic and social systems (Devall, 1993). Thus, if anthropocentrism in all of its shades is optimistic regarding human capacity to cope with environmental problems, ecocentrism's proponents take a more sceptical stance (Naess, 1973; Devall & Sessions, 1985). According to Eckersley (1992, p. 28), ecocentric theorists see the environmental crisis as evidence of '... an inflated sense of human self-importance and a misconceived belief in our capacity to fully understand biospherical processes'. Even so, the theorists argue that each of us can develop a feeling instead of knowledge for what is right from an ecological viewpoint, and that nature's integrity can be defended if each person sees herself/himself as part of nature (*ibid*). Next, I will explore which ones (if any) of these environmental ethical positions—pronounced anthropocentric or ecocentric beliefs or some ethical position in between—appear to underlie the NEP scale.

### **The new ecological paradigm and its opposite**

The NEP scale constructors Dunlap and Van Liere (1978) use the notion of social paradigm to structure their analysis of environmental beliefs. In line with Kuhn (1970), a paradigm is understood as a comprehensive worldview or system of beliefs through which people interpret the surrounding world and, consequently, guides people's expectations in society. Some collections of beliefs are more widespread than others. According to Dunlap and Van Liere (1978), the Dominant Social Paradigm (DSP) in Western society suggests that humans are superior to nature and in control of its natural resources. The DSP is also distinguished by anticipations of continuous abundance and prosperity, achieved through science, technology and economic growth (see also Geller & Lasley, 1985; Dunlap *et al.*, 2000). As Catton and Dunlap (1980, p. 18) put it, '[t]he world is vast, and thus provides unlimited opportunities

for humans ... The history of humanity is one of progress; for every problem there is a solution, and thus progress need never cease'. With the comments on environmental ethics close to mind, this clearly signals an anthropocentric stance. With reference to authors such as Brown (1978), Ehrlich and Ehrlich (1972), Ophuls (1977) and Pirages and Ehrlich (1974), Catton and Dunlap (1980, p. 25) regard this worldview as 'profoundly unecological'. The New Environmental Paradigm, on the other hand, was pictured as a more realistic worldview by the scale designers, in that it points to the need to uphold the balance of nature which is presumed to imply limits to the growth of human societies, including what, at the time, was pictured as a 'steady-state economy'. In the late 1970s, this new paradigm was thought to seriously challenge the Dominant Social Paradigm (Dunlap & Van Liere, 1978).

Many versions of the scale have been used over the years. Originally, it was labelled the New *Environmental* Paradigm and had a strong focus on limits to growth, balance of nature and non-anthropocentrism, defined as rejection of the idea that nature is justified by its usefulness for human beings alone. At that time, the scale consisted of 12 items presented to the respondents in the form of a questionnaire (Dunlap & Van Liere, 1978). Somewhat later, a condensed version of the scale was developed, consisting of six items only (Continental Group, 1982; also used by Gooch, 1995). Here, the most recent, and in my opinion, most nuanced version will be analysed—the version called the New *Ecological* Paradigm published by the scale constructors in 2000, including 15 items that reflect '... all of the crucial aspects of the NEP' which, in their interpretations are: (a) limits to growth, (b) rejection of human domination over nature, (c) balance of nature, (d) the risk of an ecocrisis and (e) rejection of human exemptionalism (Dunlap *et al.*, 2000, p. 432). The opposite positions signal adherence to the DSP. Each central aspect is measured by a number of items or statements (see Table 1).

Various steps have been taken to ensure the validity of the scale. Starting with known-group validity, the scale designers expect that people who are members of the environmental movement will display more pronounced NEP values than the general public. This anticipation is backed up by survey data (Dunlap & Van Liere, 1978; Widegren, 1998). Furthermore, there are findings indicating a statistical relationship between NEP orientations and personal behaviour (both self-reported and observed) to help solving environmental problems (e.g. Dunlap & Van Liere, 1978; Stern *et al.*, 1995). This suggests that the scale also has predictive validity (e.g. Dunlap *et al.*, 2000). As for construct validity, a number of personal characteristics are expected to be related to high scores on the NEP. For instance, people with high education are anticipated to be more in favour of the NEP than the less educated, as their exposure to ideas surrounding this worldview is likely to be greater, both through education and mass media. In addition, the highly educated are presumed advantageous in their ability to comprehend the comprehensive character of this paradigm. Furthermore, younger people are expected to be more open towards competing worldviews than older generations as they '... have been exposed to the competing DSP for a shorter period of time ...' (Dunlap & Van Liere, 1978, p. 16). Empirical findings generally support these expectations as well, indicating construct validity of the scale (*ibid.*, see



Table 1. The scale and its items

Central aspects	Paradigm indicator
<i>Human domination over nature</i>	
* Humans have the right to modify the natural environment to suit their needs	DSP
* Plants and animals have as much right as humans to exist	NEP
* Humans were meant to rule over the rest of nature	DSP
<i>Human exemptionalism</i>	
* Human ingenuity will insure that we do NOT make the earth unliveable	DSP
* Despite our special abilities humans are still subject to the laws of nature	NEP
* Humans will eventually learn enough about how nature works to be able to control it	DSP
<i>Balance of nature</i>	
* When humans interfere with nature it often produces disastrous consequences	NEP
* The balance of nature is strong enough to cope with the impacts of modern industrial nations	DSP
* The balance of nature is very delicate and easily upset	NEP
<i>The risk of an ecocrisis</i>	
* Humans are severely abusing the environment	NEP
* The so-called 'ecological crisis' facing humankind has been greatly exaggerated	DSP
* If things continue on their present course, we will soon experience a major ecological catastrophe	NEP
<i>Limits to growth</i>	
* We are approaching the limit of the number of people the earth can support	NEP
* The earth has plenty of natural resources if we just learn how to develop them	DSP
* The earth is like a spaceship with very limited room and resources	NEP

*Note:* The information comes from a similar table presented by Dunlap *et al.* (2000, p. 433), where the 15 items are introduced in the order they are presented in the questionnaire, where respondents are asked to agree or disagree. Here, I have chosen to group the items with regard to the central aspects they are designed to capture, and present them in an order that fits the logic of environmental ethics.

also Dunlap *et al.*, 2000). Content validity, finally, concerns whether the selected items measure what they are intended to measure, and is perhaps the most difficult form of validity to assess. This type of validation requires professional judgement, in this case determining if the scale matches up to the five facets identified as constituting the New Ecological Paradigm (limits to growth, balance of nature, etc.). On this account, Dunlap and Van Liere (1978, p. 16) write:

... we attempted to include a representative set of items tapping all important aspects of the NEP. Our selection was made on the basis of a careful consideration of NEP-oriented literature, and was aided by the suggestions of knowledgeable individuals. In the final

analysis, however, readers will have to make their own determination concerning the content validity of the NEP Scale.

The following study is a theoretical analysis to determine whether the NEP scale with its focus on environmentally-related beliefs and attitudes can be used to measure contemporary understandings of environmental ethics, primarily addressing the fundamentals in human–nature relationships, but also elaborating upon ways to deal with the environmental situation that follow from shallower or deeper variants of present-day environmental ethics, including different understandings of sustainability and social justice. This approach both entails a discussion of the match (or mismatch) between the central facets of the scale and the items used, *and* a critical questioning of whether the aspects singled out as being crucial to the scale are necessary and sufficient from the viewpoint of contemporary environmental ethics. After the introductory presentation of the scale above, backed up by the items in Table 1, there seems to be an obvious match between the DSP and anthropocentric beliefs, while ecocentrism, at least at first glance, seems to fit into the NEP. In the next section, I take a closer look at each of the five aspects and the 15 items used to represent them, to see whether this first impression persists. The analysis will start with what I regard as the most basic ideas on human–nature relationships following environmental ethics, that is whether or not human beings are allowed to dominate over nature and the question of human exemptionalism (see Table 1). I then turn to the possible implications of such beliefs in terms of risk perception (including balance of nature) and preferred strategies to improve human society (that is beliefs on limits to growth).

### The basics in human–nature relationships

The anthropocentric position that human beings are superior to the rest of nature and entitled to use its resources as they see fit is well captured by two of the items designed to tap *human domination over nature*, suggesting that '[h]umans were meant to rule over the rest of nature' and that '[h]umans have the right to modify the natural environment to suit their needs' (Dunlap *et al.*, 2000, p. 433). When the scale was revised in the 1980s, the authors were influenced by the environmental debate of that time, in which some defenders of the DSP claimed that humans are significantly different than other species and, thus, 'exempt from the constraints of nature' (Dunlap *et al.*, 2000, p. 432). Consequently, a new component was added to the scale, labelled *human exemptionalism*. It is captured by statements suggesting that '[h]uman ingenuity will insure that we do NOT make the earth unliveable' and '[h]umans will eventually learn enough about how nature works to be able to control it' (Dunlap *et al.*, 2000, p. 433). These items correspond very well with the optimistic touch of anthropocentric ethics. From this perspective, human exemptionalism is closely linked to human domination over nature as the unique capabilities of human beings are used to justify this supremacy.

Rejection of the items concerning human domination over nature well reflects ecocentrism (see Table 1). The same conclusion seems to hold when opposing the



previously mentioned items on human ingenuity. Human capacity is, however, not a straightforward indicator of anthropocentrism. First, people with modest anthropocentric values might doubt human capacity, even if such a doubt more accurately reflects ecocentric than anthropocentric ethics (cf. Eckersley, 1992). Second, ecocentrism does not entail a denial of humans' unique capabilities. Third, human ingenuity can clearly be used to reach many different ends. Within anthropocentrism, this primarily signals '... the confident belief that with further scientific research we can rationally manage (i.e. predict, manipulate and control) all the negative unintended consequences of large-scale human interventions in nature ...' (Eckersley, 1992, p. 51). Human ingenuity can, however, also be used to meet ecologically-oriented objectives, either to the benefit of humans (an anthropocentric stance) or to the benefit of human beings *and nature* (as ecocentric ethics would imply). As such, the NEP items on human ingenuity are difficult to interpret in terms of some specific environmental ethical position. It is even questionable whether they can be used to measure pro-environmental attitudes.

Agreement to the statement '[d]espite our special abilities humans are still subject to the laws of nature' is anticipated to signal adherence to the NEP, implying that there are ecological limits to growth of human societies, regardless of how creative and ingenious humans might be (Catton & Dunlap, 1980). From the viewpoint of environmental ethics, however, reliance on the laws of nature does not indicate devotion to any particular form of environmental ethics. The laws of nature are a scientific fact or, in the words of Meyer (2001), a truism. As such, it is compatible with any position regarding the proper relationships between human beings and nature. In spite of this, in his exploration of the nature-politics relationship in Western philosophical tradition, Meyer notes that the apparent and undisputable circumstance that humans are part of nature is more or less ignored. Meyer interprets this finding in terms of anthropocentric values hampering the recognition of this fact. Consequently, those who hold pronounced anthropocentric beliefs might respond to this item in the way the scale's constructors intend, with the reservation that one cannot really know how respondents interpret this item (or indeed any item) unless asking them in closer detail. Interesting as this might be, interviewing respondents goes well beyond the scope of this article. Here, it is sufficient to note that the item on the laws of nature does not unequivocally work to discriminate between anthropocentric and more ecocentric beliefs.

In contrast to the laws of nature, *ecological interconnectedness* is an essential element of ecocentrism, as well as of environmentalism in all its versions (Eckersley, 1992). We recall that when ecocentrism's advocates observe nature they see complex webs of ecological interdependence of which humans are parts. This is acknowledged when Catton and Dunlap discuss how the NEP challenges traditional sociological thought. In this context they observe ecological interdependence as one of the new paradigm's core features.

[T]he NEP grants that humans are an exceptional species, but stresses that they should nonetheless be viewed as one among many interdependent species (depending on many other species for food, and competing for food, space, water, and so on with other species) (Catton & Dunlap, 1980, p. 33).

Interestingly, ecological interdependence was integrated into the original NEP scale (see the section on risk perceptions below), but not in the updated 15-item version used here. The item 'humans must live in harmony with nature in order to survive' (Dunlap & Van Liere, 1978, p. 13) has been excluded from the scale with the intention to make it more contemporary, leaving space for statements that focus on the risk of ecological catastrophe (Dunlap *et al.*, 2000). It may be that respondents interpret 'the laws of nature' in terms of ecological interdependence. However, since there are many interpretations available, for instance the laws of thermodynamics exemplified by Catton and Dunlap (1980, p. 33), a more precise formulation of this item is to be preferred, one that also anchors the scale more firmly in environmental ethics. Addressing ecological interdependence does not, however, solve the problem of finding an indicator that discriminates between ecocentrism and anthropocentrism.

From the viewpoint of environmental ethics, the best item to discriminate between ecocentrism and anthropocentrism deals with rights of other species: 'Plants and animals have as much right as humans to exist' (Dunlap *et al.*, 2000, p. 433). At least in theory, rights logically stem from recognition of intrinsic worth. Those entities that have intrinsic worth also have rights.<sup>4</sup> We recall a wide variety of possibilities from environmental ethics as to whom/what intrinsic value is extended, starting with humans and moving further on to animals, species and, ultimately, the ecocentric notion of the intrinsic value of both single organisms and ecosystems. When related to such a hypothetical hierarchy of beings with intrinsic value, the NEP position implies a clear dissociation from anthropocentrism, which exclusively grants intrinsic value and thereby rights to human beings. It also stretches beyond the rights of animals, as also plants are included. It does not, however, reach the ecocentric stance that extends intrinsic worth also to ecosystems.

Whether the item on rights of animals and plants actually works to tap beliefs approaching Leopold's position on environmental ethics (see above) is an entirely different question. Based on survey data alone, we do not know how respondents reason. Support for these rights might, or not, rest on a comprehensive understanding of intrinsic worth. Other surveys suggest that wide recognition of rights, also encompassing various parts of nature, is relatively uncontroversial. For instance, in 1994, as much as 62% of a representative sample of the Swedish public fully approved of the idea of giving constitutional protection to the rights of animals and plants to life and reproduction. An additional 24% agreed with hesitation (Lundmark, 1998, p. 149). This does not necessarily imply that a vast majority of Swedes hold far-reaching ecological beliefs! If people were also asked to choose between different valuables, to judge the outcome of potential conflicts between rights, or even to see the rights of animals and plants in relation to interests such as employment, health care, macro-economic stability, *et cetera*, the result is likely to be totally different. Indeed, not even Regan, Singer or Naess could successfully move beyond the abstract level of philosophical debate, elaborating upon rights of nature in practice as well as in principle. Returning to the NEP scale, unless supplementing survey data with interviews, we cannot tell whether those who consent to the aforementioned statement on rights

of nature also extend intrinsic worth beyond human beings. Lalonde and Jackson (2002) support this, both in terms of the scale's inability to identify deep green positions *and* that much can be gained by supplementing surveys with more qualitative sampling techniques, for instance, as these authors invited respondents who had completed the scale to critically comment upon the items.

### Environmental risk perceptions

As noted above, anthropocentrism suggests that human beings are largely in control of the surrounding world and that negative side-effects of modern living can be dealt with, primarily through science and sophisticated technology. Underlying this understanding is not only a strong belief in human capacity, but also a belief in the natural world as being robust and tolerant towards human interference. Ecocentrism's advocates, on the other hand, reject the notion of humans being in control of nature, but rather see humans as part of nature's delicate web of ecological interdependence. Thus, from an ethical point of view, the scale's central facets *balance of nature* and *the risk of an ecocrisis*<sup>5</sup> are so intertwined that the analysis benefits from treating them as a set. This also finds empirical support in Noe and Snow's (1990, p. 24) analysis of NEP responses among national park visitors in the USA, suggesting that the four NEP items on balance of nature and risk perception '... indicate a deep emotional concern about the fate of nature and the environment'. As these authors use the original 12-item scale, the statement '[i]f things continue on their present course, we will soon experience a major ecological catastrophe' is not included, but rather the measure on ecological interdependence mentioned earlier ('humans must live in harmony with nature in order to survive').

The NEP items clearly portray nature in highly delicate terms (see Table 1), which corresponds very well with ecocentric perceptions of severe environmental problems due to excessive human interference with nature (Devall & Sessions, 1985). The only disturbing feature from an ethical point of view concerns the lack of information on who/what is at the heart of the attention here—are human beings the main entity of concern or does it extend further, to also embrace non-human beings and ecosystems? Thus, this is yet another instance where the NEP items are not substantial enough to 'anchor' them in environmental ethics. It should be noted, however, that this problem concerns the environmental position of the scale. The DSP items on balance of nature reflect weak environmental concern (see Table 1). When also considering rejections of the statements stressing the negative environmental impact of human interference with nature, the overall impression is that the DSP, also in this regard, rests firmly on anthropocentric beliefs.

### Limits to growth

The NEP items on *limits to growth* follow from the previous ones on balance of nature and perceptions of dramatic environmental risk, making it essential to identify the limits to what nature can take and to act accordingly to avert ecological disaster. The

NEP position (see Table 1) rejects abundance in natural resources and suggests that we are approaching the number of people the earth can support, also presenting the image of the earth as a '... spaceship with very limited room and resources' (Dunlap *et al.*, 2000, p. 433). Resource scarcity is a crucial feature of ecocentrism, while the spaceship metaphor is rather much a product of the early 1970s with the Club of Rome's report, *The Limits to Growth* (Meadows, 1972), a text that is self-reported to have influenced the scale designers (e.g. Dunlap & Van Liere, 1978). I let Eckersley (1992, p. 12) summarize the spirit of the time:

The mounting evidence of environmental degradation stemming from the exponential growth in resource consumption and human population was shown to pose very real threats to the earth's biological support systems ... what was at stake was the very survival of humanity. The metaphor of our planet as spaceship Earth—which had become popular following the circulation of images of the 'Whole Earth' taken from outer space by NASA—was widely employed to emphasize a new appreciation of the fragility and finiteness of the Earth as an 'oasis in the desert of infinite space'.

The political impact of the Club of Rome's report was substantial. As the ecocentric theorist Naess (1989, p. 152) puts it, '[t]he quantitative and sophisticated approach made the report readable within circles of experts who never would read the more romantic literature of the deep-ecology movement'. However, the report was severely criticized within the deep ecology movement, for instance, for presuming that 'we are all in the same boat', disregarding inequalities between rich and poor, both within countries and, primarily, between different parts of the world (*ibid.*). Recent research on how respondents interpret the NEP items has also found the spaceship metaphor outdated (Lalonde & Jackson, 2002). Nevertheless, the basic idea of limits to growth well matches ecocentric ethics. The population issue is also central to ecocentrism, radically expressed by Naess (1989, p. 29) as, '[t]he flourishing of human life and cultures is compatible with a substantial decrease of the human population. The flourishing of non-human life requires such a decrease'. The NEP item on population growth focuses on human survival, while the spaceship item does not explicate whether concern extends beyond the welfare of human beings.

The DSP items on growth picture nature as a giant supplier of resources for human beings to use. Physical limits to the growth of human societies are completely rejected. 'The earth has plenty of natural resources if we just learn how to develop them' (Dunlap *et al.*, 2000, p. 433). Since resources are depicted as practically inexhaustible, or perhaps possible to substitute, the only limits, if any, are the ones set by human capacity, as outlined by human exemptionalism above. In contemporary political practice, with the overarching objective to reach ecological, economical and social sustainability, these cornucopian ideas seem particularly ill-timed. Indeed, in the light of altered ecological conditions, Dunlap himself regards this aspect of the DSP as obsolete already in 1980 (in Catton & Dunlap, 1980, p. 31). More updated anthropocentric expressions and manifestations are likely to recognize limits in human–nature relations. This might explain the empirical findings giving prominence to NEP values (e.g. Widegren, 1998; Dunlap *et al.*, 2000), suggesting that shallow

ecology presently constitutes the Dominant Social Paradigm. The Dominant *Ecological* Paradigm perhaps is a more accurate label.

The DSP, however, is to be understood as a society's cultural heritage (e.g. Milbrath, 1986). As such, even if the DSP as portrayed by the scale constructors should no longer reflect the opinions of the general public, it is undeniably an important feature of Western tradition. Perhaps there are also cultural differences to be found here. Catton and Dunlap note that this confident view on the stock of natural capital available is especially rooted in American culture, as the continent's abundance of resources was most pronounced here when the industrial revolution took off. '[T]he world is vast, and thus provides unlimited opportunities for humans' (Catton & Dunlap, 1980, pp. 17–18). Thus, it might be that the DSP position on (no) limits to growth is at least slightly more valid in the USA than in Europe. In light of this, and until survey data is supported by in-depth and widespread interviews of respondents, I do not recommend these items be removed from the scale, rather that they are supplemented with some new ones that better capture the contemporary environmental ethics debate.

While the NEP captures resource scarcity from an environmental perspective, the economic dimension of the current sustainability discussion, both within environmental ethics and in political practice, is completely absent from the revised scale. The original 12-item scale, on the other hand, included two items that addressed this matter in accordance with the spirit of the time when the scale was constructed: 'To maintain a healthy economy, we will have to develop a "steady-state" economy where industrial growth is controlled' and '[t]here are limits to growth beyond which our industrialized society cannot expand' (Dunlap & Van Liere, 1978, p. 13). These items were excluded when updating the scale, yet now even those updated items seem rather old. As Jamison (2003, p. 18, my translation) notes, the negative connotations that signified the environmental debate of the 1970s, exemplified with 'limits to growth' and 'population bomb' are now being replaced by more positive concepts such as 'green products' and 'ecological modernization'. The latter concept has become increasingly popular since the late 1980s, both among policy-makers and political theorists (cf. Barry & Wissenburg, 2001) as it suggests that care for the environment can be internalized by the existing political, economic and social institutions. For instance, as Dryzek (2005, p. 142) puts it, '... there is money to be made in selling green goods and services'. Thus, economic prosperity and environmental protection are seen as possible to combine. The omission of ecological modernization and similar features from the NEP is understandable, as the scale was developed long before the publication of the Brundtland Commission's famous report in 1987, which spread these ideas to a huge audience. However, if the NEP should function as a valid and useful measure of contemporary understandings of how to address the environmental situation, I would say it is time to update the scale once again.

If choosing to reform the scale more in line with the contemporary environmental ethics debate, it also needs to include some element of social justice which, in recent years, has received considerable attention among analysts of green thought (e.g. Dobson, 1998, 2003; Schlosberg, 2002; Connelly & Smith, 2003). We caught a

glimpse of this line of reasoning when addressing the deep ecology movement's critique of the lifeboat metaphor, neglecting substantial inequalities between rich and poor. The current debate not only tackles issues of resource distribution between countries, it also addresses the potentially negative environmental consequences of each individual's life choices, both for present and future generations. The choices I make today, at work or in my home, can both affect ecosystems and other individuals' possibilities to meet their needs, now and in years to come (*ibid*). This may be regarded as yet another expression of interconnectedness that we recall as being crucial to ecocentrism. From this interconnectedness, however, follows responsibilities, or even civic duties, to minimize one's negative environmental impact. The ecocentric ideal is to make environmentally benevolent behaviour an integrated part of everyday life, including work and recreation. Ecological lifestyles can include environmentally responsible transportation, altered consumer behaviour, recycling batteries, paper and glass. Devall (1993, p. 58) makes the point that taking care of one's own household garbage is an activity that should be regarded as 'light green' (or shallow) in character. 'Deep green' or ecocentric lifestyles also involve being concerned about waste generated by other people and learning about and experiencing our interconnectedness with nature (Devall & Sessions, 1985). Several of these ambitions are presently being implemented, at least the shallower ones, as they are integrated into various policy documents in the aftermath of the Earth Summit in Rio in 1992. Neither environmental obligations nor their justification in social justice are captured by the NEP items, suggesting that the scale fails to capture one of the more central aspects of the contemporary environmental ethics debate.

## Conclusions

The central premise in this article is that environmental ethics are at the heart of what the NEP scale was constructed to measure, understanding environmental ethics as '... how we should behave in regard to nature' (Rothenberg, 1993, p. 153). However, the analysis shows that the items constituting the scale only in part reflect the contemporary environmental ethics debate. Several vital elements are completely missing.

The scale well reflects the pronouncedly anthropocentric stances that humans are more worthy than other beings, and are also separated from a nature that is pictured as a huge warehouse of resources that humans are entitled to use to increase their wealth and well-being. The scale also well captures anthropocentrism's optimism regarding human capacity to solve environmental problems. This optimism is, however, exaggerated when viewed from the perspective of contemporary theorizing on environmental ethics. More modern (yet more modest) interpretations of anthropocentrism recognize ecological dependency, at least in the sense that humans depend on nature's resources for survival and well-being. From this follows sensitivity for risks involved in human-nature relations, including the risk that natural resources might run out. These are all central notions of the NEP position of the scale that stress the negative side-effects of human interference with nature. Does this mean that, from the viewpoint of environmental ethics, also the environmental position of



the scale is anthropocentric, yet 'shallower', in character? According to environmental ethics, these NEP beliefs should be classified as anthropocentric, if justifying environmental concern by human benefits alone. Unfortunately, the items used seldom include enough information to enable such an interpretation.

When revising the scale in the 1980s, an item of significance for environmental ethics, relating to ecological interdependence, was removed from the scale to provide room for statements stressing the risk of ecological disaster. These items are clearly relevant but these too fail to address who/what is the main entity for concern—does it halt at human beings (as anthropocentrism suggests) or does it also embrace other organisms and even ecosystems (as ecocentrism proposes)? Furthermore, the revised NEP position still displays an element—the spaceship metaphor—that is disturbingly dated both from an environmental ethics position and when considering how respondents more recently have interpreted this particular item (Lalonde & Jackson, 2002).

Overall, the greener shades of environmental ethics are treated with less sophistication by the scale constructors than the anthropocentric ones. The NEP item that comes closest in terms of capturing the 'deeper' forms of environmental ethics concerns non-human rights, suggesting that '[p]lants and animals have as much right as humans to exist' (Dunlap *et al.*, 2000, p. 433). Pronounced anthropocentrism is only compatible with human rights, while more ecologically oriented forms of environmental ethics stretch the community of rights holders also, at least in principle, to embrace plants, animals and their habitat (cf. Leopold, 1949). This seems to be the position captured by the NEP, with the exception of the habitat, that is the location where species can thrive, which is not mentioned here. Ecocentrism both extends intrinsic value (and rights) to individual organisms and to ecosystems. This ethical position is not covered by the scale.

Taken together, ecocentric orientations cannot be identified by using the NEP scale in its present form. Whether this is a serious flaw depends on what researchers wish to measure. Undoubtedly, the scale has strong merits also from the viewpoint of environmental ethics. It enables explorations of support for ecological and anti-ecological beliefs both within and between specific groups of individuals (e.g. Noe & Snow, 1990). It can also be used to shed light upon cultural differences between countries (e.g. Gooch, 1995). Furthermore, the fact that the scale has been used since the 1970s invites researchers to analyse to what extent support for the NEP and the DSP has fluctuated over the years.

For those who also want to explore ecocentric ethical positions among the general public, I see at least two options. One alternative is to complement large-scale questionnaires with interviews to deepen the understanding of people's environmental beliefs, especially among those who adhere to the more ecological views, finding out just where along the green continuum they can be located. The second alternative is to revise the scale. In my view, the scale would strongly benefit from also incorporating ecocentric values, as the other ethical positions would stand out more clearly when compared to this outlook which is not entirely focused on the well-being of humans. One item tapping wide understandings of intrinsic worth that can be considered is that used by Thompson and Barton (1994, p. 152), stating that 'nature

is valuable for its own sake'. Furthermore, I have argued that responsibility for the potentially negative consequences of one's actions, for present and future generations as well as for nature, should be incorporated into the scale as it is both a central aspect of contemporary environmental ethics and of current political efforts to reach sustainability. A revision of the scale along these lines does not necessarily imply that the scale needs more items. As beliefs regarding human exemptionalism are of no help to distinguishing between various expressions of environmental ethics, this entire component of the scale could be removed, to provide room for entirely new items.

No doubt, it is a difficult task to modify a functioning scale, jeopardizing replication and comparability. Even so, the scale has been updated before to obtain a more accurate instrument for measuring an ecological worldview. When revising the scale once again, it might also be worth considering new labels for those paradigms addressed. The New Ecological Paradigm is not new anymore. Furthermore, empirical research shows that it is more widely endorsed than the 'Dominant' Social Paradigm. From the viewpoint of environmental ethics, it would be fruitful to consider three paradigms instead of two, let us say the *Traditional* Social Paradigm with pronouncedly anthropocentric and anti-ecological beliefs (leaving most of the DSP items intact), a *Dominant Ecological* Paradigm with updated NEP items and, finally, a *New Deeper Ecological* Paradigm that reflects an ecocentric understanding of the relationships between human beings and nature. From a strictly theoretical point of view, such a radical revision seems a relatively easy task, not having to bother about how the scale works as a statistical measuring instrument! Even if settling with the original two paradigms, updating the NEP scale more in line with environmental ethics would undoubtedly enrich future research on environmental beliefs.

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## Notes

1. It is worth noting that humans, because of their position at the top of many food-chains, are more dependent on animals and plants than vice versa.
2. The terms *inherent* value and *intrinsic* value are sometimes used synonymously (e.g. Devall & Sessions, 1985), but they are also given different meanings. Sessions (1992, p. 100) argues that an entity has '... intrinsic value when *humans* place a value on it for its own sake'. Inherent value, on the other hand, often means that the value of natural entities does not depend on the recognition or awareness of any other being (e.g. Regan, 1983). Mathews (1994) uses the terms in quite the opposite way, yet relying on similar definitions.
3. There are also a variety of ideological combinations. To use the ecological stance as an illustration, there are eco-feminist expressions as well as eco-socialist and even eco-authoritarian versions (Dryzek & Schlosberg, 2001).

4. A classic democratic argument is that every individual (human being) is considered to have interests which, in turn, they also have the right to pursue. Goodin (1996) argues that this line of reasoning is applicable to a wider community of beings. Consequently, if natural entities have inherent worth, they can also be argued to have interests, and according to established conceptions of democracy, interests call for equal consideration in the democratic decision-making process. This clearly does not mean that each living organism should be *guaranteed* certain rights, such as rights to life and development. Ecocentric theorists rather discuss basic guidelines for deciding what to do if/when human and non-human rights come into conflict. For instance, animals or ecosystems should enjoy freedom from harm caused by humans, unless the interference is justified by the need to satisfy some vital human need (Naess, 1989).
5. Dunlap *et al.* (2000, p. 432) speak of the 'possibility' of an ecocrisis, which is an unfortunate wording in its positive overtones.

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